

from the base portion of each tooth side to its respective tooth surface. As a result, these specifically shaped grooves provide the motor with more force and less power loss.

These grooves are illustrated best in Figs. 3-6 and discussed on pages 4-7 of the specification. Each groove includes a first tooth side 152 and an opposing, second tooth side 152. These opposing tooth sides, which can form half of each groove, include a tip portion and a base portion, each with a different arc. The arc of each opposing base portion has its center of origin positioned below the surface of its respective tooth. Conversely, the arc of each opposing tip portion has its center of origin located above the surface of its respective tooth. This positioning of the center of origin of each arc is clear to the ordinary artisan when the figures of the instant specification are viewed in combination with the written specification, which clearly discloses the relationship of each arc to the tooth surface. As a result, no new matter has been added.

Claims 1-20 have been cancelled. As a result, the rejections of these claims are moot. Nevertheless, the outstanding rejections will be discussed as if they had been applied to claims 21-26.

Claims 1, 2, 8-12 and 18-20 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,037,122 to Bonner et al.

Claim 21 recites a motor that includes a stator and a plurality of phase units. The stator and the phase units each include a plurality of teeth that are separated from each other by a geometrically shaped groove that has first and second opposing sides. Each side of the grooves includes a first portion having a first arc and a second portion having a second arc. Claim 21 also recites that (1) the first arc has a center of origin located below the recited tooth surfaces and (2) the second arc has a center of origin located above the recited tooth surfaces.

The patent to Bonner discloses a motor with an E-core having a plurality of teeth separated by respective grooves. However, contrary to that recited in claims 21-26, the grooves disclosed in the patent to Bonner do not include the recited arcs. Instead, the grooves disclosed in Bonner include opposed sides that each have a first groove portion formed of an arc and a second portion formed of a straight line that forms a ninety-degree angle with its tooth surface. As a result, the patent to Bonner fails to disclose the recited groove having opposing sides formed of two arcs. Additionally, the patent to Bonner fails to disclose a first arc having its center of origin located below the tooth surface and a second arc having its center located above the tooth surface as recited in claim 21. As a result, the patent to Bonner fails to anticipate the motor recited in claims 21-26. Withdrawal of the rejection is requested.

Claims 3-7 and 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bonner in view of GB 2,260,860 to Zhou that discloses tooth shapes for rotors or stators of electrical machines. Each groove disclosed in the Zhou publication includes opposing tooth sides. Each tooth side includes an arcuate portion and a linear portion. The tooth sides do not include two or more arcuate portions having different arcuate centers.

As with the patent to Bonner, the publication of Zhou fails to disclose a groove between adjacent teeth that includes (1) a first arc having a center of origin located below the tooth surfaces and (2) a second arc having a center of origin located above the tooth surfaces. Instead, as discussed, each side of the Zhou groove includes an arc proximate the base of the groove and a linear portion that extends between this arc and a respective tooth surface. As a result, the Zhou publication would not have motivated one of ordinary skill in the art to modify the motor of Bonner with the geometrically shaped

groove disclosed by Zhou because the resulting combination would not arrive at the motor recited in claims 21-26. Withdrawal of the rejection is requested.

Claims 6, 7, 16 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bonner in view of GB 2,260,860 to Zhou and U.S. Patent No. 4,647,802 to Konecny that is asserted to teach that the relative areas between the first and second arcs is a design variable within the skill of the ordinary artisan. Like the patent to Bonner and the publication to Zhou, the patent to Konecny does not disclose the recited groove including (1) a first arc having a center of origin located below the tooth surfaces and (2) a second arc having a center of origin located above the tooth surfaces. As a result, the modification suggested in the Office Action would not have been obvious to the ordinary artisan because the resulting combination does not arrive at the recited motor. Withdrawal of the rejection is requested.

For all of the above-discussed reasons, Applicants respectfully submit that claims 21-26 are allowable and that the application is now in condition for allowance. A notice to this effect is earnestly solicited.

If any questions or issues remain, the resolution of which the Examiner feels would be advanced by a conference with Applicants' attorney, the Examiner is invited to contact Applicants' attorney at the number noted below.

The Commissioner is authorized to charge all fees or to credit all refunds associated with the filing of this amendment to Deposit Account No. 19-0733.

Respectfully submitted,

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